REMARKS

Amendments

Claim 1 is amended to correct an error in punctuation, and to delete thermal transfer printing. Additionally, claim 12 is amended to recite that the polymerisable liquid crystal material is directly printed onto at least one surface of a reflective substrate. See, e.g., the Examples.

Rejection under 35 USC 103(a) in view of US 6,806,930

Claims 1-21 and 24-36 are rejected as allegedly being obvious in view of Moia (US 6,806,930). This rejection is respectfully traversed.

Moia discloses an optical security or optical authentication device. The device comprises at least a first layer of optically anisotropic material which is selectively oriented in different orientations over its area so as to encrypt an object therein. See, e.g., column 1, lines 57-67.

This first layer is a liquid crystal polymer (LCP) layer. Additionally, Moia discloses that this LCP layer is preferably "aligned and structured/patterned by a further layer of linear photopolymer (LPP)--synonymous with photooriented polymer network (PPN)." See column 2, lines 40-45. **Thus, it is LPP layer which aligns/orients the LCP layer.**

As shown in Figure 2a, the device comprises a substrate 10 (e.g. glass, plastic, paper or metal), a cholesteric layer or metallic layer 12 as reflector (optional), a patterned (structured) LPP/LCP layer 14, and an optional polariser layer 16. In preparing the device of Figure 2, layer 12 is obtained by spin-coating (other coating or printing techniques are also applicable) a cholesteric LCP material onto the substrate 10. Then, an orientable linearly photopolymerisable (LPP) layer 141 is spin-coated (other printing or coating techniques are also applicable) onto the cholesteric layer 12. See column 4, lines 13-21, column 5, lines 42-46, and column 5, lines 24-26.

In order to obtain an orientation pattern, the LPP layer is exposed through a photo mask to linearly polarize UV light and using different polarization directions. The resultant orientation pattern contains an encrypted object or image. See column 5, lines 38-48.

Then, a cross-linkable liquid crystal monomer or pre-polymer mixture (LCP) 142 is

coated onto the oriented LPP layer. This layer of LCP material can be applied by spin-coating, "but also other printing or coating techniques are applicable." As noted at column 6, lines 9-14, it is the orientation of the LPP layer 141 that aligns the LCP material 142, and the LCP layer is then subjected to cross-linking by exposure to UV light at a suitable wavelength.

Contrary to the assertion in the rejection, the disclosure of Moia fails to render obvious applicants' claimed method. Firstly, it is noted that the material for the LCP layer is a liquid crystal polymer. The formation of the LCP layer does not suggest the printing of a polymerizable liquid crystal material.

Additionally, as discussed above, the LCP layer 142 in the device of Moia is applied to the oriented layer of LPP material, not onto a surface of a reflective substrate. Moia does not disclose that spin-coating (or any other procedure for applying the LCP) induces or enhances spontaneous aligns the liquid crystal material on a reflective substrate. Instead, it is the underlying layer of LPP material which causes the alignment.

It is clear that for Moia the manner in which material is coated onto a surface to make the device is of no importance, since Moia disclose that these materials are applied by spin-coating or "other printing or coating techniques." Moia provide no suggestion of achieving alignment of a layer of polymerizable liquid crystal material by the act of printing.

In view of the above remarks, it is respectfully that the disclosure of Moia fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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